

AMENDMENTS TO THE CLAIMS

1-116. (Cancelled)

117. (Currently amended) A method of processing a cell population that comprises adipose-derived stem cells, comprising:

removing a first portion of adipose tissue that comprises a cell population that comprises adipose-derived stem cells from a patient;

introducing the removed first portion of adipose tissue that comprises said cell population that comprises adipose-derived stem cells into a self-contained adipose-derived stem cell processing unit configured to maintain a closed pathway, wherein said self-contained adipose derived stem cell processing unit comprises:

a tissue collection container that is configured to receive adipose tissue that is removed from a patient, wherein said tissue collection ~~chamber~~container is defined by a closed system;

a first filter that is disposed within said tissue collection container, wherein said first filter is configured to retain a first component of said unprocessed adipose tissue and pass a second component of said unprocessed adipose tissue, such that said first filter separates said first component from said second component, and wherein said first component comprises a cell population that comprises adipose-derived stem cells and said second component comprises lipid, mature adipocytes, and saline;

a cell collection ~~chamber~~container, which is configured to receive said first component comprising a cell population that comprises adipose-derived stem cells from said tissue collection container, wherein said cell collection container is within said closed system;

a conduit configured to allow passage of said first component comprising a cell population comprising adipose-derived stem cells from said tissue collection ~~chamber~~container to said cell collection ~~chamber~~container while maintaining a closed system;

a cell concentrator disposed within said cell collection ~~chamber~~container, which is configured to facilitate the concentration of said first component

comprising a cell population that comprises adipose-derived stem cells so as to obtain a concentrated population of cells that comprises adipose-derived stem cells, wherein said cell concentrator comprises a centrifuge or a spinning membrane filter; and

an outlet configured to allow the aseptic removal of said concentrated population of cells that comprise adipose-derived stem cells;

separating and concentrating said cell population that comprises adipose-derived stem cells from said removed first portion of adipose tissue within said self-contained cell processing unit while maintaining said closed pathway to obtain a concentrated cell population that comprises adipose-derived stem cells; and

mixing said concentrated cell population that comprises adipose-derived stem cells with a second portion of unprocessed adipose tissue from said patient.

118. (Canceled)

119. (Previously presented) The method of Claim 117, wherein said first or second portion of adipose tissue that is removed from said patient is lipoaspirate.

120. (Previously presented) The method of Claim 117, wherein said first or second portion of adipose tissue that is removed from said patient is obtained by excisional lipectomy.

121. (Canceled)

122. (Previously presented) The method of Claim 117, further comprising a disaggregation step, wherein said cell population that comprises adipose-derived stem cells contained in said removed first portion of adipose tissue is mechanically or enzymatically disaggregated from said mature adipocytes and connective tissue present in said first portion of adipose tissue that was removed from said patient prior to separation.

123. (Cancelled)

124. (Previously presented) The method of Claim 117, wherein said cell concentrator comprises a spinning membrane filter.

125. (Previously presented) The method of Claim 117, wherein said cell concentrator comprises an antibody.

126. (Previously presented) The method of Claim 125, wherein said antibody is selected from the group consisting of AP2, CD3, CD19, and CD11b.

127. (Previously presented) The method of Claim 117, wherein said cell concentrator comprises a centrifuge.

128. (Previously presented) The method of Claim 122, wherein said disaggregation step comprises an enzymatic digestion.

129. (Previously presented) The method of Claim 128, wherein said enzymatic digestion comprises a collagenase.

130. (Previously presented) The method of Claim 128, wherein said enzymatic digestion comprises a neutral protease.

131. (Previously presented) The method of Claim 128, wherein said enzymatic digestion comprises trypsin.

132. (Previously presented) The method of Claim 117, wherein said adipose-derived stem cells in said concentrated cell population that comprises adipose-derived stem cells are at least 0.1% of the cellular component.

133. (Previously presented) The method of Claim 117, wherein said adipose-derived stem cells in said concentrated cell population that comprises adipose-derived stem cells are between about 2% and about 12% of the cellular component.

134. (Previously presented) The method of Claim 117, wherein said concentrated cell population that comprises adipose-derived stem cells has a concentration of about  $2 \times 10^7$  cells/100ml of adipose tissue.

135. (Previously presented) The method of Claim 117, wherein said concentrated cell population that comprises adipose-derived stem cells comprises endothelial precursor cells.

136-139 (Canceled)

140. (Previously presented) The method of Claim 117, further comprising contacting said concentrated cell population that comprises adipose-derived stem cells with an additive.

141. (Previously presented) The method of Claim 140, wherein said additive is a tissue or tissue fragment.

142-146. (Canceled)

147. (Previously presented) The method of Claim 141, wherein said tissue or tissue fragment is unprocessed adipose tissue.

**Application No.: 10/614,643**  
**Filing Date: July 7, 2003**

148. (Previously presented)The method of Claim 141, wherein said tissue or tissue fragment is a connective tissue or bone.

149. (Previously presented)The method of Claim 140, wherein said additive is a biological or artificial scaffold.